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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,248	03/09/2001	Donald Henry Willis	PU010033	7064

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EXAMINER

ANYASO, UCHENDU O

ART UNIT	PAPER NUMBER
2675	13

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,248

Applicant(s)

WILLIS ET AL.

Examiner

Uchendu O Anyaso

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2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11 and 14-29 is/are rejected.
- 7) ☒ Claim(s) 3,4,12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. **Claims 1-29** are pending in this action.

Claim Rejections - 35 USC ' 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 5-11, 15-21 and 25-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. 5,247,169) in view of Mihara (EP 0457497), and further in view of *Carlson* (U.S. 4,523,230).

Regarding independent **claims 1, 11 and 21**, and for **claims 5-10, 16-20 and 25-29**, Okada teaches a means for dividing an input signal into a plurality of signals having at least a high brightness signal and a low brightness signal (column 2, lines 17-33).

Furthermore, Okada teaches a split low pass filter (10, 11) arrangement and a delay matching circuit (15, 16, 18) wherein the low-pass filters (10, 11) are for independently low pass filtering rising transients and falling transients in said low brightness signal to reduce adjacent pixel interdependence, and the delay matching circuit for the high brightness signal (figures 1, 2 at 10, 11, 15, 16, 18, column 7, lines 5-16, figure 3 at S7; column 3, lines 4-13;).

However, Okada does not teach how to slew rate limit a signal. On the other hand, Mihara teaches shows how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Okada and Mihara because while Okada teaches a means for dividing an input signal into a high-brightness and low-brightness part and low-pass filters (10, 11) for independently low pass filtering rising transients and falling transients in said low brightness signal, Mihara teaches shows how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27). The motivation for combining these inventions would have been to provide an excellent waveform display device capable of efficiently displaying large quantity of data (column 2, lines 20-25).

However, Okada and Mihara do not teach a means for providing the brightness signals and the slew rate limited signal to provide an output that reduces sparkle artifacts. On the other hand, Carlson teaches this concept by teaching how low-pass filters are coupled in a cascade through a summer wherein the first of the filters is associated with a lower subspectra and the second filter is associated with a higher subspectra (column 18, lines 29-49, figure 2a; *see also* column 8, lines 24-62, figure 2a) such that sparkle is suppressed (column 13, lines 46-50). Furthermore, Carlson teaches a method of reducing sparkle artifacts due to non linearity in a transfer function by teaching an image processing system using narrow-band coring such that filtering after coring suppresses sparkle (column 13, lines 46-50).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Okada, Mihara and Carlson because while the combination of Okada and Mihara teaches the concept of dividing an input signal into a plurality of signals having at least a high brightness signal and a low brightness signal and then slew rate limiting one of the signals (column 2, lines 17-33), Carlson teaches the method sparkle suppression (column 13, lines 46-50; column 18,

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lines 29-49, figure 2a; see also column 8, lines 24-62, figure 2a). The motivation for combining these inventions would have been to achieve noise reduction without the introduction of noticeable artifacts in a display image (see Abstract).

Furthermore, Carlson teaches a method of reducing sparkle artifacts due to non linearity in a transfer function by teaching an image processing system using narrow-band coring such that filtering after coring suppresses sparkle (column 13, lines 46-50).

Regarding **claim 15**, in further discussion of claim 11, Okada teaches a split low pass filter (10, 11) arrangement and a delay matching circuit (15, 16, 18) wherein the low-pass filters (10, 11) are for independently low pass filtering rising transients and falling transients in said low brightness signal to reduce adjacent pixel interdependence, and the delay matching circuit for the high brightness signal (figures 1, 2 at 10, 11, 15, 16, 18, column 7, lines 5-16, figure 3 at S7; column 3, lines 4-13;).

Furthermore, Mihara teaches shows how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27).

4. **Claims 2, 14 and 22-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (U.S. 5,247,169) in view of Mihara (EP 0457497), and further in view of *Carlson* (U.S. 4,523,230), as in claims 1, 12 and 19, and further in view of Jang (U.S. 5,361,094).

Regarding **claims 2 and 14**, in further discussion of claims 1 and 11, However, Okada, Mihara and Carlson do not teach a gamma table. On the other hand, Jang teaches a video signal processing circuit of a CCD-type color video camera that includes a gamma correction circuit,

delay circuit, a chrominance signal processor and luminance signal processor (see Abstract; column 3, lines 26-45, figure 3 at 20).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Okada, Mihara, Carlson and Jang because while the combination of Okada, Mihara and Carlson how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27) and a method of reducing sparkle artifacts, Jang teaches a video signal processing circuit of a CCD-type color video camera that includes a gamma correction circuit, delay circuit, a chrominance signal processor and luminance signal processor (see Abstract; column 3, lines 26-45, figure 3 at 20).. The motivation for combining these inventions would have been to improve the picture quality of a video device (column 2, lines 28-32).

Regarding **claims 22-24**, in further discussion of claim 21, Okada teaches a means for dividing an input signal into a plurality of signals having at least a high brightness signal and a low brightness signal (column 2, lines 17-33).

Furthermore, Mihara teaches shows how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27).

However, Okada, Mihara and Carlson do not teach a gamma table. On the other hand, Jang teaches a video signal processing circuit of a CCD-type color video camera that includes a gamma correction circuit, delay circuit, a chrominance signal processor and luminance signal processor (see Abstract; column 3, lines 26-45, figure 3 at 20).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Okada, Mihara, Carlson and Jang because while the combination of Okada, Mihara and Carlson how to slew rate limit signals in varying rates and then displaying the signals (*see* Abstract; *see also* column 4, lines 23-27) and a method of reducing sparkle artifacts, Jang teaches a video signal processing circuit of a CCD-type color video camera that includes a gamma correction circuit, delay circuit, a chrominance signal processor and luminance signal processor (*see* Abstract; column 3, lines 26-45, figure 3 at 20).. The motivation for combining these inventions would have been to improve the picture quality of a video device (column 2, lines 28-32).

Allowable Subject Matter

5. **Claims 3, 4, 12 and 13** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed January 26, 2004 have been fully considered but they are not persuasive.

Applicant amended independent claims 1, 11 and 21 to include the feature of reducing sparkle artifacts due to non-linearity in a transfer function of a liquid crystal imager. Applicant then argues that references Gadeyne, Ho, Iwaki and Timm do not teach this feature.

As a result of applicant's amendment, Okada, Mihara and Carlson have been combined to collectively teach applicant's invention as amended. Specifically, Carlson teaches a method of reducing sparkle artifacts due to non linearity in a transfer function by teaching an image processing system using narrow-band coring such that filtering after coring suppresses sparkle (column 13, lines 46-50).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Uchendu O. Anyaso

04/19/2004



CHANH NGUYEN
PRIMARY EXAMINER